CHAPTER 5 Creating Page Templates

When you complete this chapter, you will be able to:

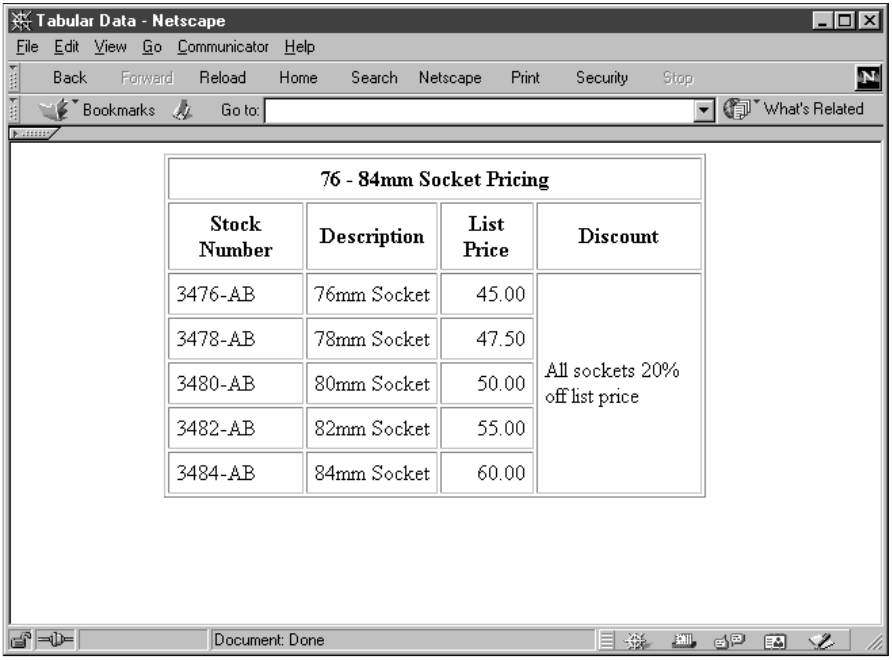
- Understand how tables can enhance the display of your content
- Use HTML table elements and attributes to customize page templates
- Learn how to take a page design from concept to HTML code
- Recognize basic page templates

HTML table elements allow Web designers to create grid-based layouts. You can use tables to create templates and to solve design problems. This chapter explains how to create templates by manipulating the most commonly used table elements and attributes. By creating and using templates, you gain more control over how your content displays in the browser, while building more visually interesting pages.

UNDERSTANDING TABLE BASICS

To build effective page templates, you must be familiar with the HTML table elements and attributes. This section describes the most commonly used table elements and attributes.

When HTML was introduced, tables were used only for tabular data, as show in Figure 5-1.


Tabular Data - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Stop
Bookmarks Go to: What's Related
Document: Done

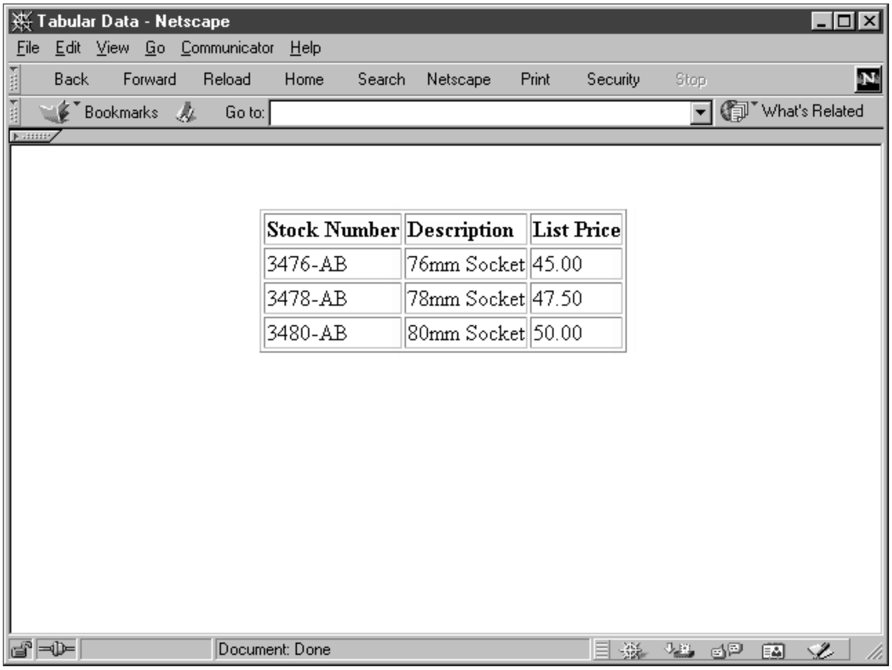
76 - 84mm Socket Pricing			
Stock Number	Description	List Price	Discount
3476-AB	76mm Socket	45.00	All sockets 20% off list price
3478-AB	78mm Socket	47.50	
3480-AB	80mm Socket	50.00	
3482-AB	82mm Socket	55.00	
3484-AB	84mm Socket	60.00	

FIGURE 5-1
Tables of tabular data

After examining tables, Web designers realized they could build print-like design structures that allowed them to break away from the left-alignment constraints of basic HTML. With tables, Web designers had the control and the tools to build columnar layouts, align text, create gutters, and structure pages. Tables currently are used as the primary design tool throughout the WWW. Although Cascading Style Sheets (CSS) provide an alternate method of controlling page display, they will not replace tables until all browsers provide more complete CSS support. There are some discrepancies across browsers in table support, especially with the HTML 4.0 table enhancements, but tables currently are supported enough to make them the page design method of choice for some time to come.

USING TABLE ELEMENTS

The HTML <TABLE> element contains the table information, which consists of table row elements <TR> and individual table data cells <TD>. These are the three elements used most frequently when you are building tables. Figure 5-2 shows a basic table that uses these three table elements.


Tabular Data - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Stop
Bookmarks Go to: What's Related
Document: Done

Stock Number	Description	List Price
3476-AB	76mm Socket	45.00
3478-AB	78mm Socket	47.50
3480-AB	80mm Socket	50.00

FIGURE 5-2
Basic table

The basic table is the result of the following code:

```
<TABLE BORDER>
<TR><TD>Stock Number</TD><TD>Description</TD><TD>
List Price</TD></TR>
<TR><TD>3476-AB</TD><TD>76mm Socket</TD><TD>45.00</TD></TR>
<TR><TD>3478-AB</TD><TD>78mm Socket</TD><TD>47.50</TD></TR>
<TR><TD>3480-AB</TD><TD>80mm Socket</TD><TD>50.00</TD></TR>
</TABLE>
```

TIP

Remember to always close the <TABLE> element properly. Netscape Navigator does not display a table, or any of the contained data if the closing </TABLE> tag is missing. Internet Explorer ignores this omission and displays the table.

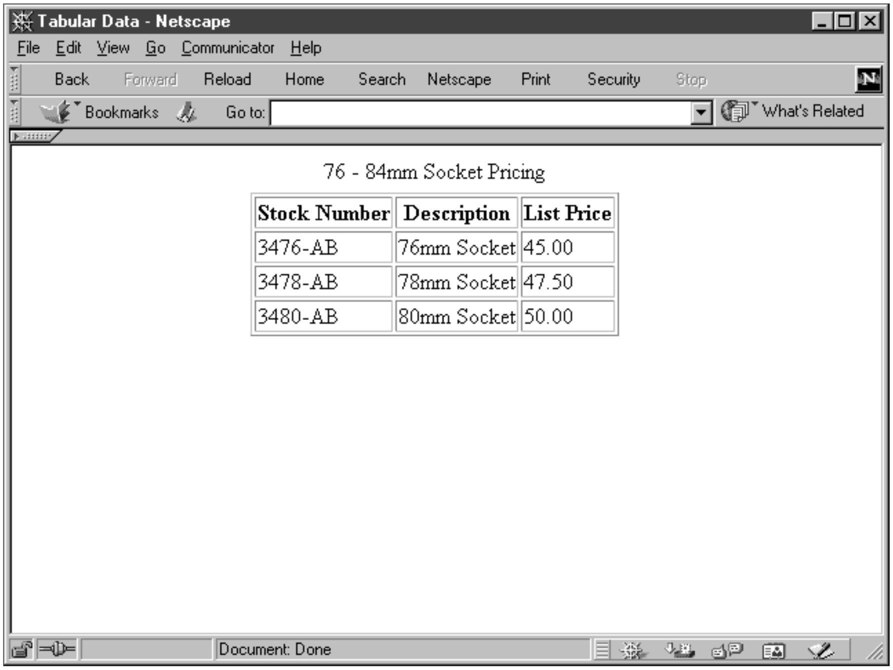
The <TABLE> element contains the rows and cells that make up the table. The <TR> tag signifies the three rows of the table. Notice that the <TR> tag contains the table cells, but no content of its own. The BORDER attribute displays the default border around the table and between each cell.

You may occasionally use the <CAPTION> and <TH> elements when creating tables. <CAPTION> lets you add a caption to the top or bottom of the table. By default, captions display at the top of the table. You can use the ALIGN=BOTTOM attribute to align the caption at the bottom of the table.

The <TH> tag lets you create a table header cell that presents the cell content as bold and centered. Figure 5-3 shows the same table with a caption and table header cells.

FIGURE 5-3

Table with caption and table header row


Tabular Data - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Stop
Bookmarks
Go to:
What's Related
Document: Done

76 - 84mm Socket Pricing

Stock Number	Description	List Price
3476-AB	76mm Socket	45.00
3478-AB	78mm Socket	47.50
3480-AB	80mm Socket	50.00

TIP

The HTML 4.0 table model adds a number of new table elements that are not supported in all browsers. As of late 1999, only Internet Explorer supports these elements:

- **COL** – Specifies column properties
- **COLGROUP** – Specifies multiple column properties
- **THEAD** – Signifies table header
- **TBODY** – Signifies table body
- **TFOOT** – Signifies table footer

The following code shows the table syntax:

```
<TABLE BORDER>
<CAPTION>76 - 84mm Socket Pricing</CAPTION>
<TR><TH>Stock Number</TH><TH>Description</TH><TH>
List Price</TH></TR>
<TR><TD>3476-AB</TD><TD>76mm Socket</TD><TD>45.00</TD></TR>
<TR><TD>3478-AB</TD><TD>78mm Socket</TD><TD>47.50</TD></TR>
<TR><TD>3480-AB</TD><TD>80mm Socket</TD><TD>50.00</TD></TR>
</TABLE>
```

DEFINING TABLE ATTRIBUTES

Table attributes let you further define a number of table characteristics. You can apply attributes at three levels of table structure: global, row-level, or cell-level.

Using Global Attributes

Global attributes affect the entire table (See Table 5-1). Place these attributes in the initial <TABLE> tag.

TABLE 5-1
Global table attributes

Attribute	Description
ALIGN	Floats the table to the left or right of the text; this is a deprecated attribute in HTML 4.0
BACKGROUND	Specifies a background image that tiles the background of the cell; this is a deprecated attribute in HTML 4.0
BGCOLOR	Specifies a color for the table background; this is a deprecated element in HTML 4.0
BORDER	Displays a border around the table and each cell within the table
CELLPADDING	Inserts spacing within the table cells on all four sides; the value for this attribute is a pixel count
CELLSPACING	Inserts spacing between the table cells, on all four sides; the value for this attribute is a pixel count
HEIGHT	Adjusts the height of the table; the value either can be a percentage relative to the browser window size or a fixed pixel amount; this is a deprecated element in HTML 4.0
WIDTH	Adjusts the width of the table; the value either can be a percentage relative to the browser window size or a fixed pixel amount; this is a deprecated element in HTML 4.0

Using Row-Level Attributes

Row-level attributes affect an entire row (See Table 5-2). Place these attributes in the beginning <TR> tag.

TABLE 5-2
Row-level table attributes

Attribute	Description
ALIGN	Horizontally aligns the contents of the cells within the row; use LEFT, CENTER, or RIGHT values; LEFT is the default; this is a deprecated element in HTML 4.0
BGCOLOR	Specifies a background color for the cells within the row; this is a deprecated element in HTML 4.0
VALIGN	Vertically aligns the contents of the cells within the row; use TOP, MIDDLE, or BOTTOM values; MIDDLE is the default

Using Cell-Level Attributes

Cell-level attributes affect only the contents of one cell (See Table 5-3). Place these attributes in the beginning <TD> tag.

TABLE 5-3
Cell-level table attributes

Attribute	Description
ALIGN	Horizontally aligns the contents of the cell; use LEFT, CENTER, or RIGHT values; LEFT is the default; this is a deprecated element in in HTML 4.0
BGCOLOR	Specifies a background color for the cell; this is a deprecated element in HTML 4.0
COLSPAN	Specifies the number of columns a cell spans
HEIGHT	Adjusts the height of the cell; the value either can be a percentage relative to the table size or a fixed pixel amount
ROWSPAN	Specifies the number of rows a cell spans
VALIGN	Vertically aligns the contents of the cell; use TOP, MIDDLE, or BOTTOM values; MIDDLE is the default
WIDTH	Adjusts the width of the cell; the value either can be a percentage relative to the table size or a fixed pixel amount; this is a deprecated element in HTML 4.0

Cell-level attributes take precedence over row-level attributes. The following code for a single table row has conflicting ALIGN attributes. The ALIGN=RIGHT value in the <TD> tag overrides the ALIGN=CENTER in the <TR> tag.

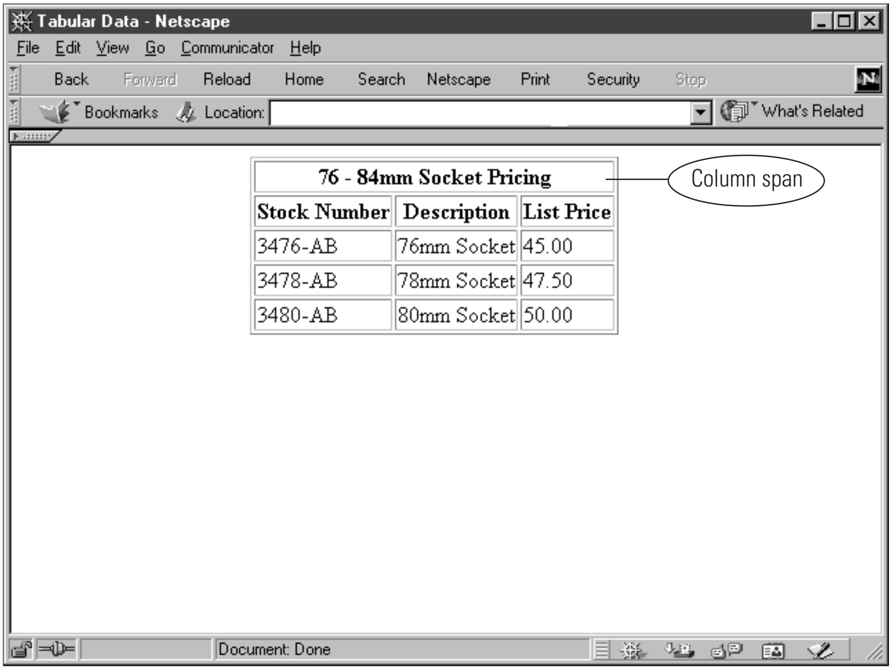
```
<TR ALIGN=CENTER><TD>Center-aligned text.</TD><TD ALIGN=
RIGHT>Right-aligned text.</TD></TR>
```

SPANNING COLUMNS

The COLSPAN attribute lets you create cells that span multiple columns of a table. Column cells always span to the right. Figure 5-4 shows a table with a column span in the first row.

The following code shows the COLSPAN attribute:

```
<TABLE  BORDER>
<!— Row 1 contains the column span -->
<TR><TH COLSPAN=3>76 - 84mm Socket Pricing</TH></TR>
<TR><TH>Stock Number</TH><TH>Description</TH><TH>List
Price</TH></TR>
<TR><TD>3476-AB</TD><TD>76mm Socket</TD><TD>45.00</TD></TR>
<TR><TD>3478-AB</TD><TD>78mm Socket</TD><TD>47.50</TD></TR>
<TR><TD>3480-AB</TD><TD>80mm Socket</TD><TD>50.00</TD></TR>
</TABLE>
```


Tabular Data - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Stop
Bookmarks Location:
What's Related
Document: Done

76 - 84mm Socket Pricing		
Stock Number	**Description**	**List Price**
3476-AB	76mm Socket	45.00
3478-AB	78mm Socket	47.50
3480-AB	80mm Socket	50.00

Column span

FIGURE 5-4
Table with a column span

When you build column spans, make sure that all of your columns add up to the correct number of cells. In this code, because each row has three cells, the COLSPAN attribute is set to three to span all columns of the table, as shown in Figure 5-4.

SPANNING ROWS

The ROWSPAN attribute lets you create cells that span multiple rows of a table. Rows always span down. Figure 5-5 shows the table in Figure 5-4 with a row span added to the right column.

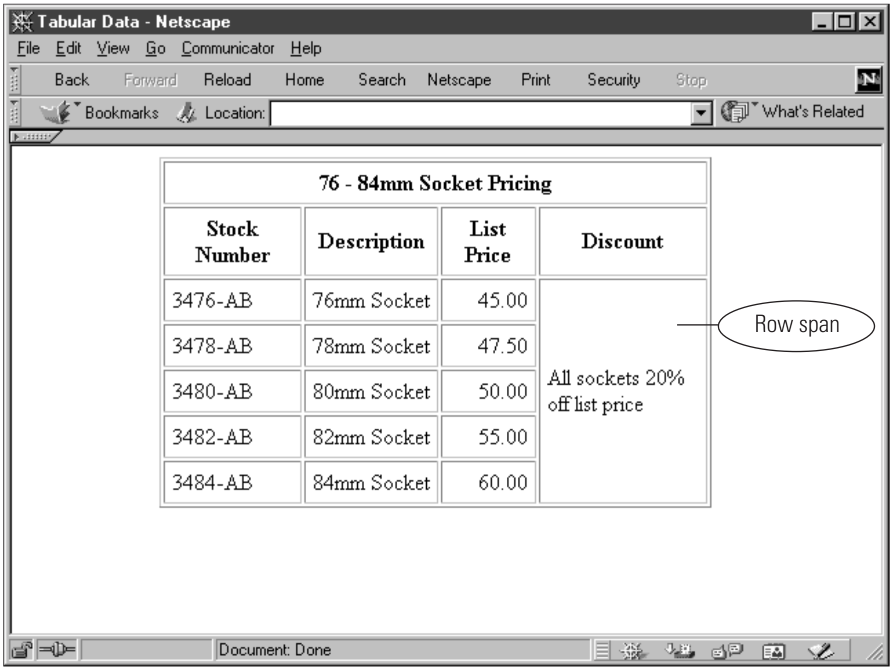
The following code shows the new cell that contains the ROWSPAN attribute and the extra column cell in the table header row:

```
<TABLE  BORDER>
<!-- Row 1 contains the column span -->
<TR><TH COLSPAN=4>76 - 84mm Socket Pricing</TH></TR>
<TR><TH>Stock Number</TH><TH>Description</TH><TH>List
Price</TH><TH>Discount</TH></TR>
<!-- Row 3 contains the row span in the 4th cell -->
<TR><TD>3476-AB</TD><TD>76mm Socket</TD><TD ALIGN=RIGHT>
45.00</TD> <TD ROWSPAN=5>All sockets 20% off list price
</TD></TR>
<TR><TD>3478-AB</TD><TD>78mm Socket</TD><TD ALIGN=RIGHT>
47.50</TD></TR>
```

```
<TR><TD>3480-AB</TD><TD>80mm Socket</TD><TD ALIGN=RIGHT>
50.00</TD></TR>
<TR><TD>3482-AB</TD><TD>82mm Socket</TD><TD ALIGN=RIGHT>
55.00</TD></TR>
<TR><TD>3484-AB</TD><TD>84mm Socket</TD><TD ALIGN=RIGHT>
60.00</TD></TR>
</TABLE>
```

FIGURE 5-5

Table with new column and row span


Tabular Data - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Stop
Bookmarks Location: What's Related
Document: Done

76 - 84mm Socket Pricing			
Stock Number	**Description**	**List Price**	**Discount**
3476-AB	76mm Socket	45.00	All sockets 20% off list price
3478-AB	78mm Socket	47.50	
3480-AB	80mm Socket	50.00	
3482-AB	82mm Socket	55.00	
3484-AB	84mm Socket	60.00	

Row span

The row span cell is the fourth cell in the third row. It spans down across five rows of the table. Notice also that to accommodate the new column, the COLSPAN attribute value in the first row must be changed to four.

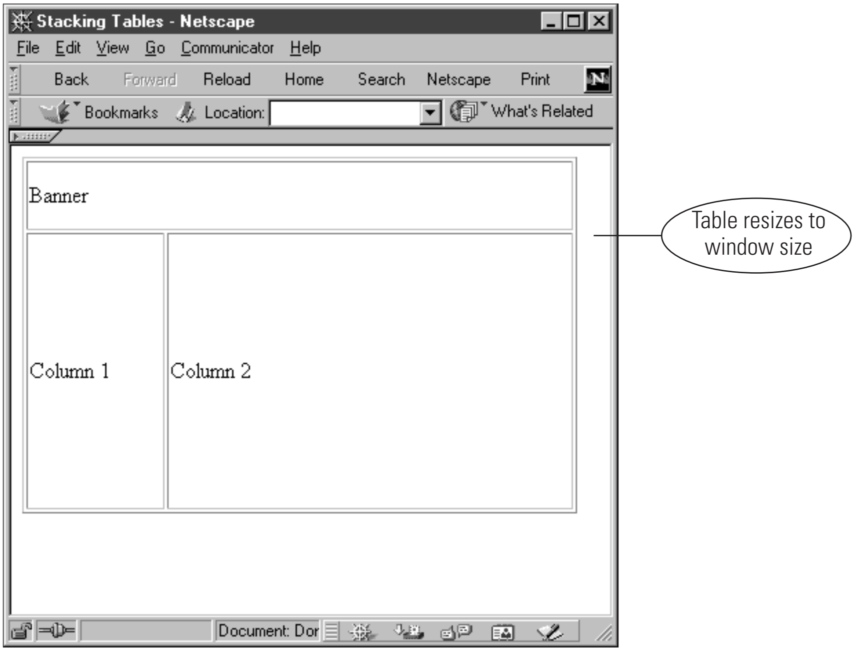
CHOOSING RELATIVE OR FIXED TABLE WIDTHS

Whether you choose to use relative or fixed tables depends on your content and the amount of control you want over the result. Many Web designers prefer fixed tables because they can be sure that their view of the content will be the same as the user's. The current trend is to provide content in relative tables that adapt to different screen resolutions.

You can set relative table widths as percentages in the table WIDTH attribute. If you choose relative table widths, your tables resize based on the size of the browser window. Figure 5-6 shows a table with the WIDTH attribute set to 100 percent.

FIGURE 5-6

Table with WIDTH attribute set to 100 percent


Stacking Tables - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print
Bookmarks Location: What's Related
Document: Dor

Banner

Column 1

Column 2

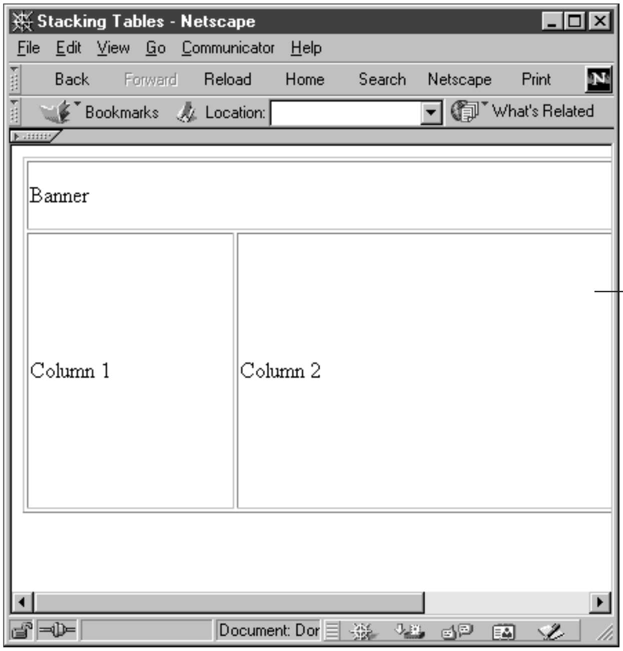
Table resizes to window size

The browser will try to fit the content into the window, wrapping text as necessary. The advantage to using a relative width is that the resulting table is more compatible across different browser window sizes and screen resolutions. The disadvantage is that you have little control over the way the user sees the result because your content can shift from user to user based on browser window size.

You can set absolute table widths as pixel values in the table WIDTH attribute. Fixed tables remain constant regardless of the browser window size. The advantage to using a fixed table is that you can gain greater control over the result the user sees. The user's browser size and screen resolution have no affect on the display of the page. Figure 5-7 shows a table with the WIDTH attribute set to a fixed width of 600 pixels. Notice that the table extends beyond the browser window.

FIGURE 5-7

Table with WIDTH attribute set to 600 pixels


Stacking Tables - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print
Bookmarks Location: What's Related
Document: Dor

Banner

Column 1

Column 2

Table extends beyond browser window

DETERMINING THE CORRECT FIXED WIDTH FOR A TABLE

The most common width for page template tables is between 580 and 600 pixels. This width supports the current lowest common denominator—640 x 480 screen resolution—to which most mainstream Web sites still adhere. A close look at the browser window in Figure 5-8 shows why you should set the width to approximately 600 and not 640.

Notice the page margin on the left of the screen. The width of this margin is approximately ten pixels and is built into the browser. The scroll bar on the right of the screen is approximately 20 pixels. You do not want your table to extend into this area because then the horizontal scroll bar will appear. Finally, allow approximately another ten pixels for a right page margin. Subtracting all of these values from 640 equals an approximate table width of 600 pixels. These values vary slightly based on the browser and operating system.

TIP

Internet Explorer displays tables slightly wider than Netscape Navigator, so you will find that 590 is an optimal fixed table width when the base screen resolution is 640 x 480.

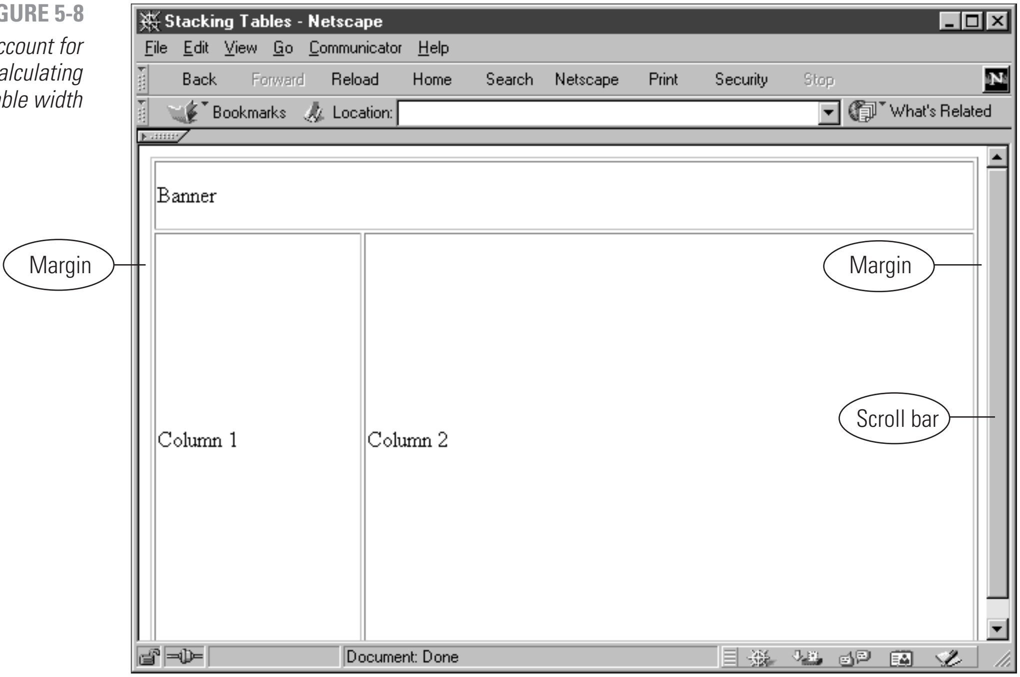

Stacking Tables - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Stop
Bookmarks Location:
What's Related
Banner
Column 1
Column 2
Document: Done
Margin
Margin
Scroll bar

FIGURE 5-8
Areas to account for when calculating table width

REMOVING DEFAULT TABLE SPACING

Default spacing values are included in the table even when you do not specify values for the table's BORDER, CELLPADDING, or CELLSPACING attributes. Without the default spacing values, the table cells would have no built-in white space between them, and the contents of adjoining cells would run together. Depending on the browser, approximately two pixels are reserved for each of these values. You can remove the default spacing by explicitly stating a zero value for each attribute. The code looks like this:

```
<TABLE BORDER=0 CELLPADDING=0 CELLSPACING=0>
```

This very useful technique lets you join the contents of adjacent cells. You can take an image, break it into separate pieces, and then rejoin the pieces in a table by removing the default spacing. Because the image is composed of separate parts, you can link individual parts of the image, or include animated GIFs in the image. (Refer to Chapter 7 for more information on animated GIFs.)

Figure 5-9 shows five images assembled in a table with the default spacing. Even though borders are turned off, their default space remains in the table. The default cell padding and cell spacing also are adding to the white space between the images.

FIGURE 5-9
Default table spacing

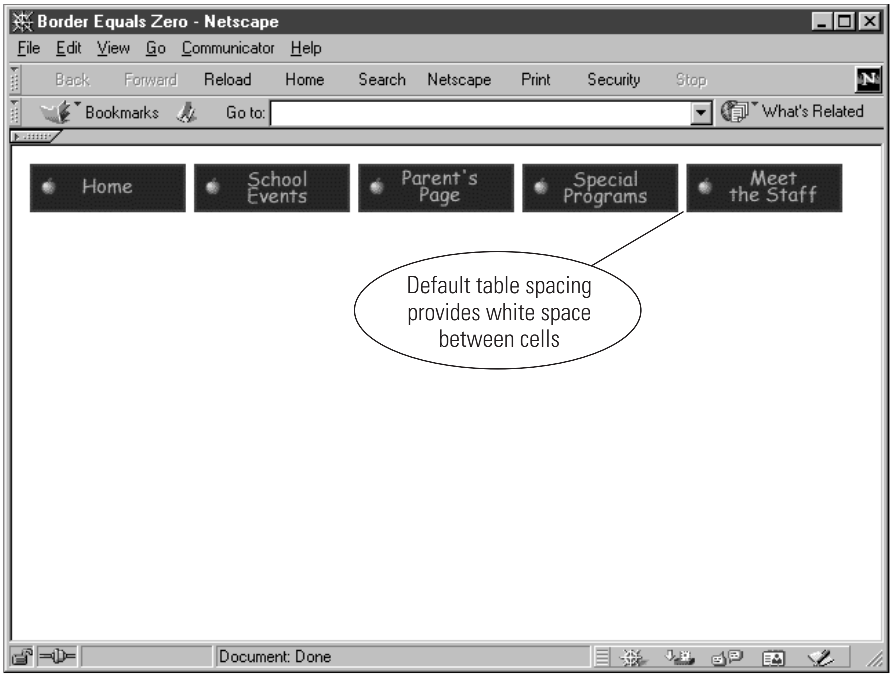

Border Equals Zero - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Stop
Bookmarks Go to: What's Related
Home
School Events
Parent's Page
Special Programs
Meet the Staff
Default table spacing provides white space between cells
Document: Done

Figure 5-10 shows the same image with BORDER, CELLPADDING, and CELLSPACING attributes set to zero.

FIGURE 5-10
Default spacing removed

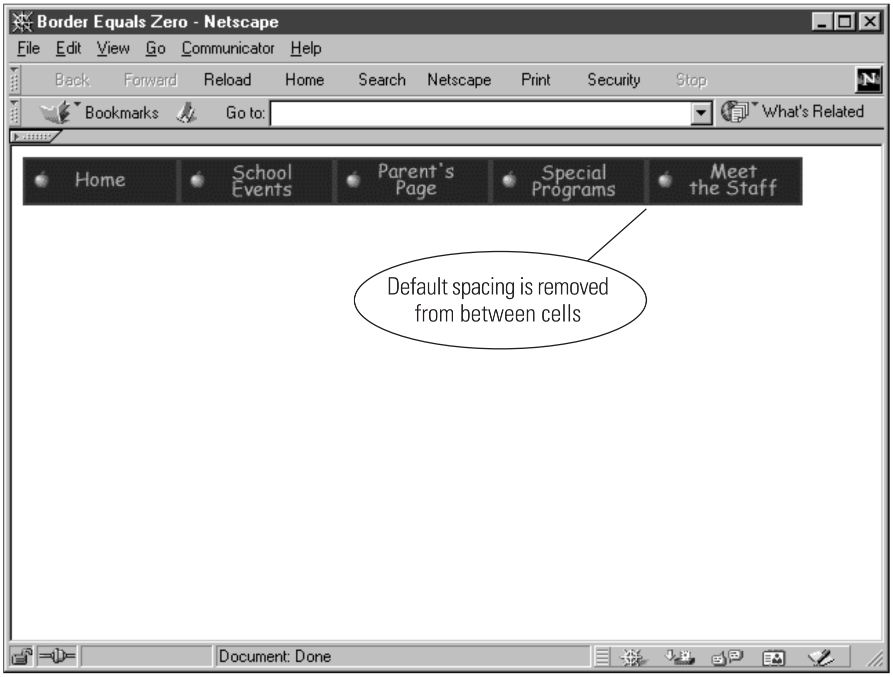

Border Equals Zero - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Stop
Bookmarks Go to: What's Related
Home
School Events
Parent's Page
Special Programs
Meet the Staff
Default spacing is removed from between cells
Document: Done

TABLE POINTERS

When designing HTML tables, observe the following guidelines to create effective tables:

- Write easy-to-read code
- Remove extra spaces
- Center tables
- Stack tables
- Nest tables

WRITING EASY-TO-READ TABLE CODE

The HTML table code can get complicated when you add content to your tables. Not only do you have to manage all the table tags and attributes, but also the text, images, and links in your cells. One small error in your code can cause unpredictable results in the browser.

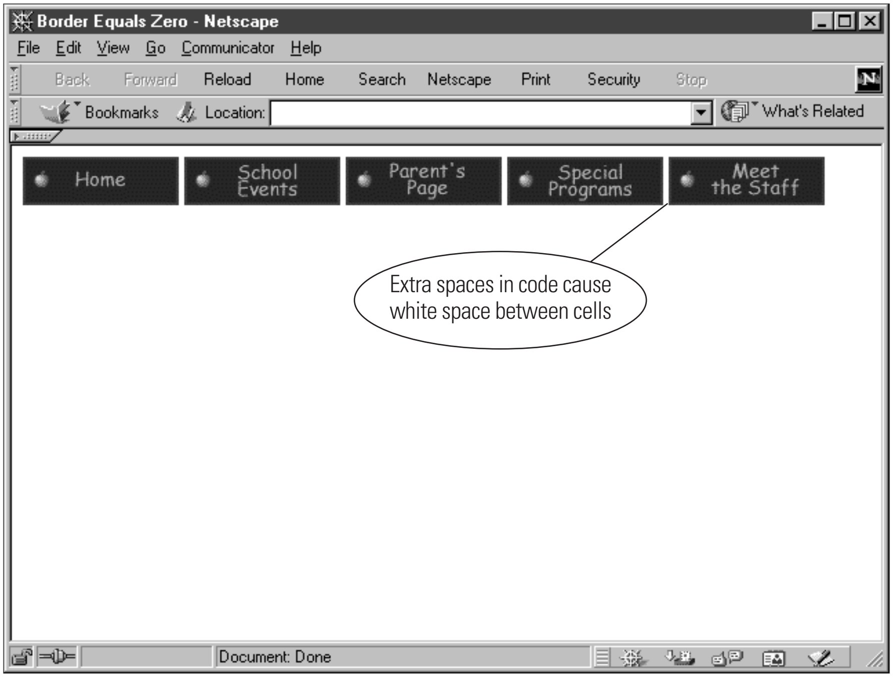
You can simplify your table creation and maintenance tasks by writing clean, commented code. If you use plenty of white space in the code, you will find your tables are easier to access and change. Adding comments helps you quickly find the code you want. The various code samples in this chapter demonstrate the use of comments and white space in table code.

REMOVING EXTRA SPACES

Always remove any leading or trailing spaces in your table cell content. In some browsers the extra spaces create white space in the table cells. These spaces cause problems if you are trying to join the contents of adjacent cells. Figure 5-11 shows the effect of extra space in cells. Even though the default spacing has been removed, there still is space between the images.

The code shows the extra spaces after the <IMG> element within each cell.

```
<TABLE BORDER=0 CELLPADDING=0 CELLSPACING=0>
<TR>
<TD><IMG SRC="smhome.GIF" WIDTH=113 HEIGHT=35 ALT=""
border="0"> </TD>
<TD><IMG SRC="smevents.GIF" WIDTH=113 HEIGHT=35 ALT=""
border="0"> </TD>
<TD><IMG SRC="smparent.GIF" WIDTH=113 HEIGHT=35 ALT=""
border="0"> </TD>
<TD><IMG SRC="smprogrm.gif" WIDTH=113 HEIGHT=35 ALT=""
border="0"> </TD>
<TD><IMG SRC="smstaff.gif" WIDTH=113 HEIGHT=35 ALT=""
border="0"> </TD>
</TR>
</TABLE>
```


Border Equals Zero - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Stop
Bookmarks Location: What's Related
Home
School Events
Parent's Page
Special Programs
Meet the Staff
Document: Done

Extra spaces in code cause white space between cells

FIGURE 5-11
Extra spaces in table cells

TIP

Although HTML 4.0 allows you to use the ALIGN=CENTER attribute in the <TABLE> element, most browsers do not support it, so you should use the <DIV> element as a container for the table.

CENTERING TABLES

You can center tables on the page using either the <CENTER> or <DIV> elements. Centering a fixed table makes the table independent of resolution changes because the table always is centered in the browser window. Because <CENTER> is deprecated, using the ALIGN=CENTER attribute is the preferred coding method. Figure 5-12 shows a centered table at 800 x 600 resolution.

The following highlighted code shows the use of the <DIV> element to center the table.

```
<DIV ALIGN=CENTER>
<TABLE WIDTH=590 BORDER>
<TR><TD COLSPAN=2 HEIGHT=50>Banner</TD></TR>
<TR><TD HEIGHT=250 WIDTH=20%>Column 1</TD><TD>Column 2</TD>
</TR>
</TABLE>
</DIV>
```

STACKING TABLES

Browsers must read the entire table code before displaying the table. Any text outside of a table displays first. If you build long tables, they increase the time the user has to wait before the tables appear in the browser. Because of the way browsers display tables, build several small tables rather than one large one. This technique also can simplify your table design task because smaller tables are easier to work with. Figure 5-13 shows a page template built with two stacked tables.

FIGURE 5-12
Centered table

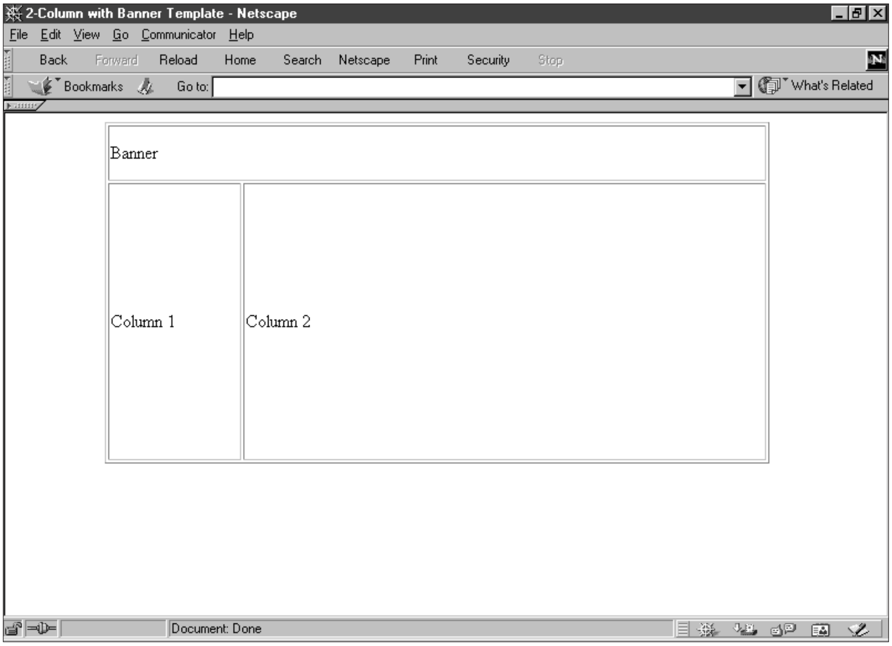
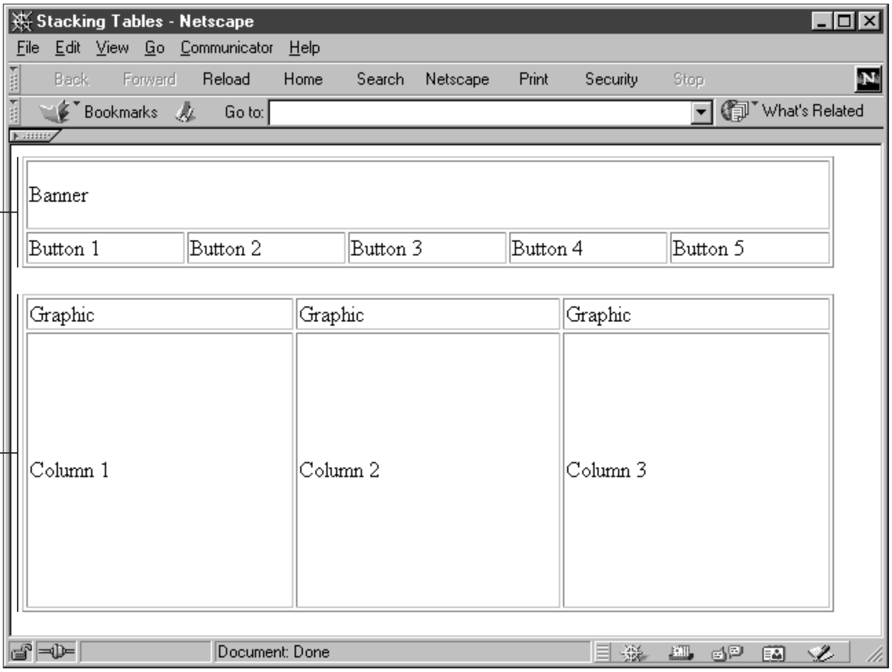

2-Column with Banner Template - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Stop
Bookmarks Go to: What's Related
Banner
Column 1
Column 2
Document: Done

FIGURE 5-13
Stacked tables


Stacking Tables - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Stop
Bookmarks Go to: What's Related
Banner
Button 1
Button 2
Button 3
Button 4
Button 5
Graphic
Graphic
Graphic
Column 1
Column 2
Column 3
Document: Done

First table

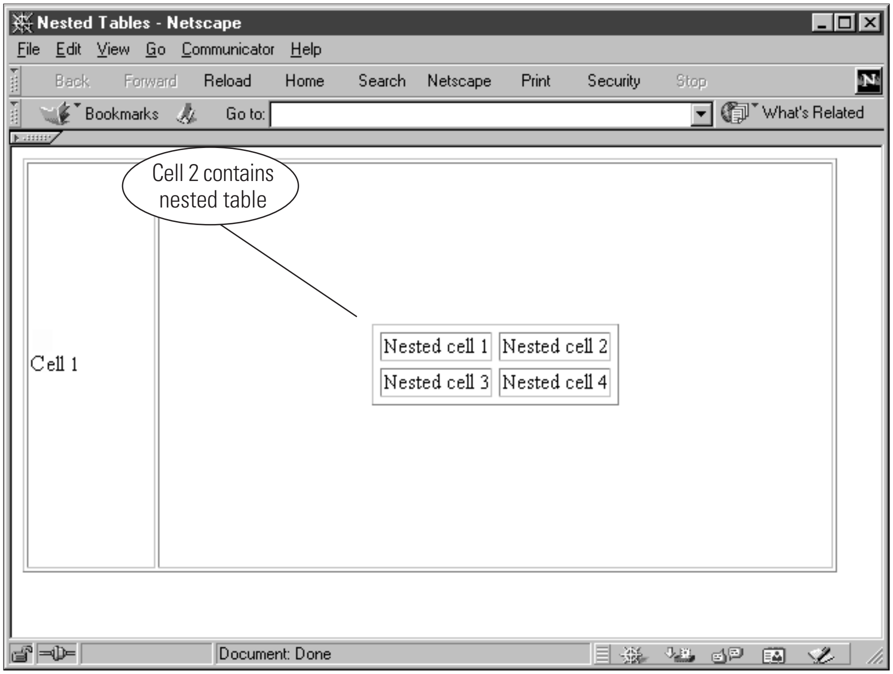
Second table

Another benefit of stacking tables is that they display in the same order they appear in the code. This means the user can be reading the contents of your first table while the next one downloads. Also, more complex layouts are easier to build if you break them into multiple tables. Notice that the top table in Figure 5-13 has five columns, while the second has three. It would be much harder to build this layout using a single table.

NESTING TABLES

You can nest tables by placing an entire table within a table cell. Both Netscape Navigator and Internet Explorer support table nesting. Figure 5-14 shows an example of a two-column table with a second table nested in the right column.

FIGURE 5-14
Nesting tables


Nested Tables - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Stop
Bookmarks Go to: What's Related
Cell 2 contains nested table
Cell 1
Nested cell 1
Nested cell 2
Nested cell 3
Nested cell 4
Document: Done

The code for the nested tables follows. The nested table in the right column is highlighted.

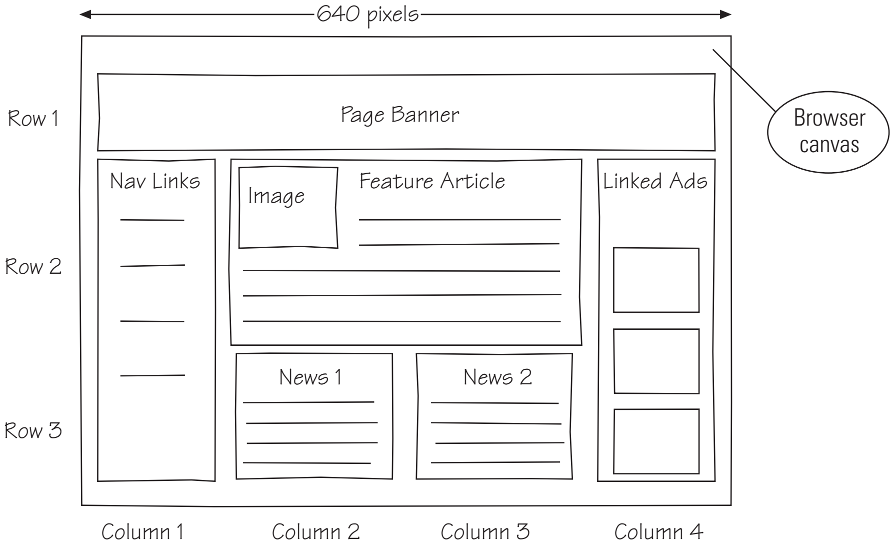
```
<TABLE WIDTH=590 BORDER HEIGHT=300>
<TR><TD>Cell 1</TD>
<TD ALIGN=CENTER>
<!-- Nested table starts here -->
<TABLE BORDER CELLSPACING=5>
<TR><TD>nested cell 1</TD><TD>nested cell 2</TD></TR>
<TR><TD>nested cell 3</TD><TD>nested cell 4</TD></TR>
```

```
</TABLE>
<!-- Nested table ends here -->
</TD>
</TABLE>
```

CREATING A PAGE TEMPLATE

Now that you understand the mechanics of building tables, you can apply your knowledge to creating a page template. This example demonstrates how to take a design sketch for a Web page and build a template for the page layout. Figure 5-15 shows a sketch of the desired Web page layout. This layout is designed for a base screen resolution of 640 x 480, so the table will be fixed at a width of 590 pixels.

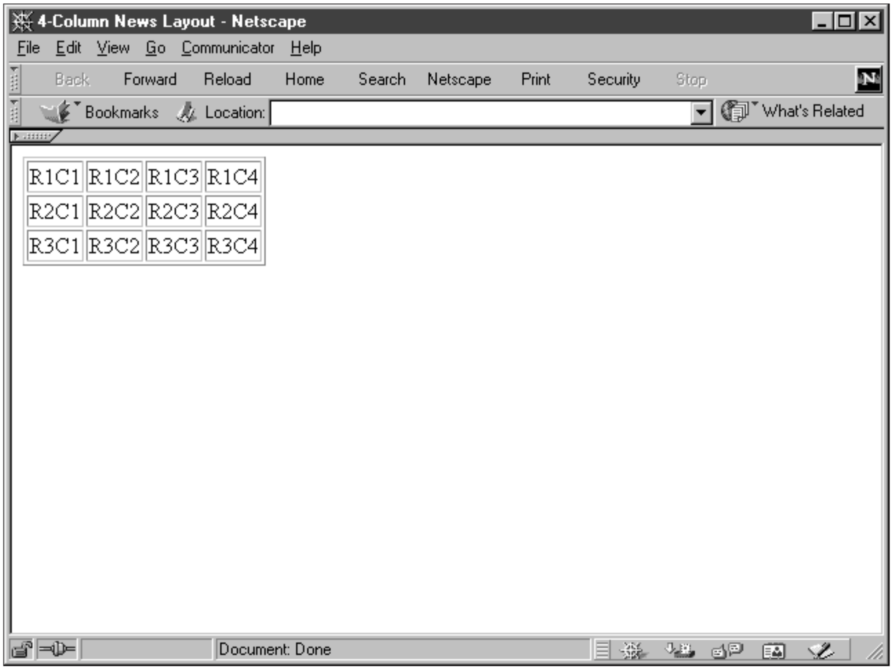
FIGURE 5-15
Sketch of visualized layout



Notice that the basic structure of the table is three rows by four columns. Each column uses 25 percent of the total width of the template. Row spans and column spans break across the layout to provide visual interest.

BUILDING THE BASIC TABLE STRUCTURE

Start by building the basic table structure, including all the cells and rows of the table. As you customize the table, you can remove extraneous cells. The basic structure is a three-row by four-column table as shown in Figure 5-16.


4-Column News Layout - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Stop
Bookmarks Location:
What's Related
Document: Done

R1C1	R1C2	R1C3	R1C4
R2C1	R2C2	R2C3	R2C4
R3C1	R3C2	R3C3	R3C4

FIGURE 5-16
Basic three-row by four-column table

The following code shows the basic table syntax:

```
<TABLE BORDER>
<TR><TD>R1C1</TD><TD>R1C2</TD><TD>R1C3</TD><TD>R1C4</TD>
</TR>
<TR><TD>R2C1</TD><TD>R2C2</TD><TD>R2C3</TD><TD>R2C4</TD>
</TR>
<TR><TD>R3C1</TD><TD>R3C2</TD><TD>R3C3</TD><TD>R3C4</TD>
</TR>
</TABLE>
```

Notice the use of row and cell placeholders such as R1C1, which stands for Row One, Cell One. These placeholders are visible in the browser and provide reference points that are helpful as you build a table.

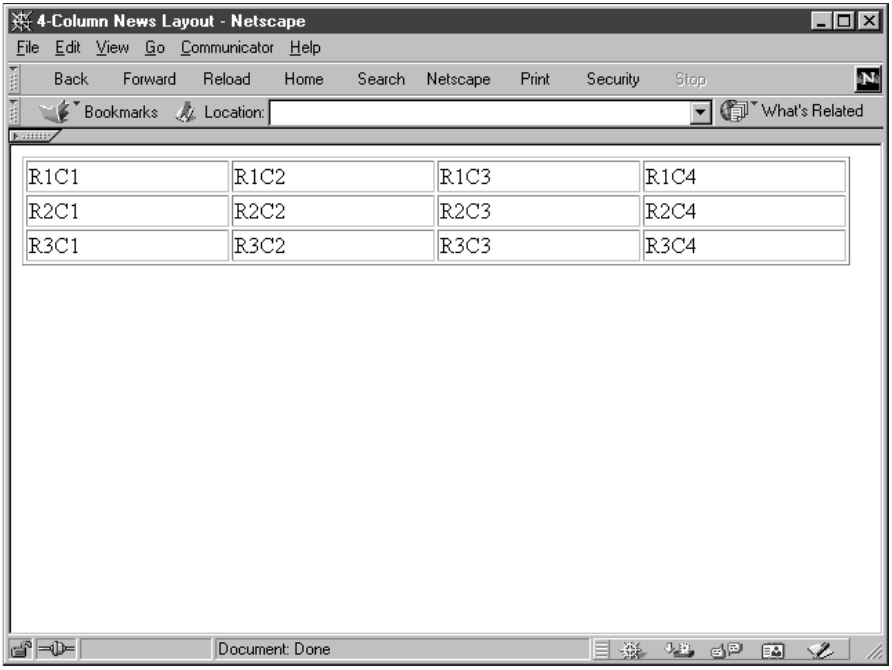
TIP

Making the borders visible with the BORDER attribute provides another visual reference to the structure of the table. When you complete your design, you can turn borders off by removing the BORDER attribute from the <TABLE> element.

SETTING A FIXED WIDTH

One of the design characteristics of the template is a fixed width that is not dependent on the user's browser size or screen resolution. To accomplish this characteristic, use a pixel value in the global WIDTH attribute. Figure 5-17 shows the result of setting the width to 590 pixels.

FIGURE 5-17
Width set to 590 pixels


4-Column News Layout - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Stop
Bookmarks Location:
What's Related
Document: Done

R1C1	R1C2	R1C3	R1C4
R2C1	R2C2	R2C3	R2C4
R3C1	R3C2	R3C3	R3C4

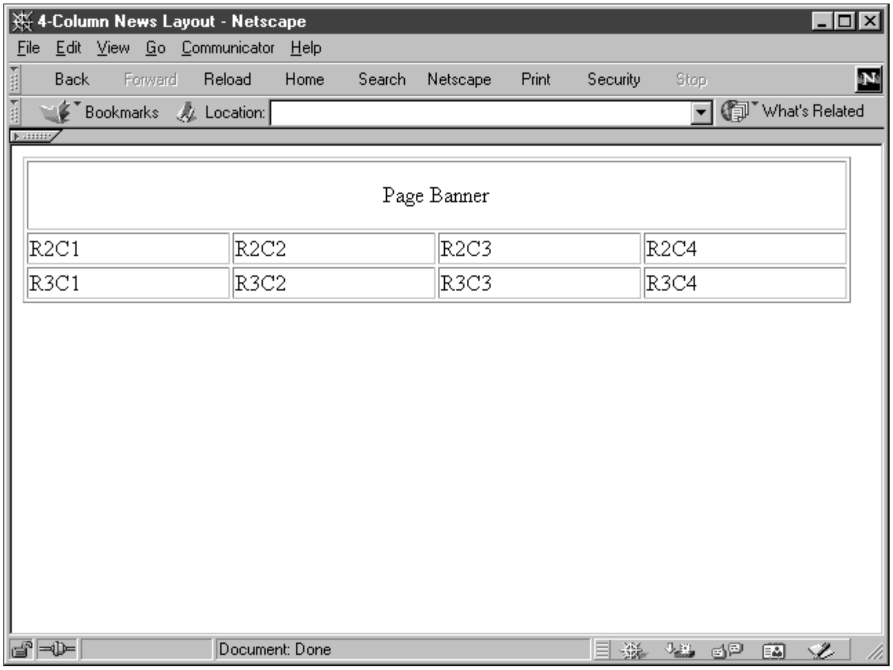
The following highlighted code shows the WIDTH attribute:

```
<TABLE BORDER WIDTH=590>
<TR><TD>R1C1</TD><TD>R1C2</TD><TD>R1C3</TD><TD>R1C4</TD>
</TR>
<TR><TD>R2C1</TD><TD>R2C2</TD><TD>R2C3</TD><TD>R2C4</TD>
</TR>
<TR><TD>R3C1</TD><TD>R3C2</TD><TD>R3C3</TD><TD>R3C4</TD>
</TR>
</TABLE>
```

CREATING THE PAGE BANNER CELL

The page banner cell is R1C1, which now contains the text “Page Banner” to match the design sketch in Figure 5-15. This cell spans the four columns of the table using the COLSPAN attribute. To create the column span successfully, you must remove all but one cell in the first row of the table. Figure 5-18 shows the results of the column span.

FIGURE 5-18
Page Banner cell


4-Column News Layout - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Stop
Bookmarks Location:
What's Related
Document: Done

Page Banner			
R2C1	R2C2	R2C3	R2C4
R3C1	R3C2	R3C3	R3C4

The following highlighted code shows the COLSPAN attribute:

```
<TABLE BORDER WIDTH=590>
<!-- Row 1 Contains Page Banner -->
<TR><TD COLSPAN=4 ALIGN=CENTER HEIGHT=50>Page Banner</TD><
/TR>
<TR><TD>R2C1</TD><TD>R2C2</TD><TD>R2C3</TD><TD>R2C4</TD></
TR>
<TR><TD>R3C1</TD><TD>R3C2</TD><TD>R3C3</TD><TD>R3C4</TD></
TR>
</TABLE>
```

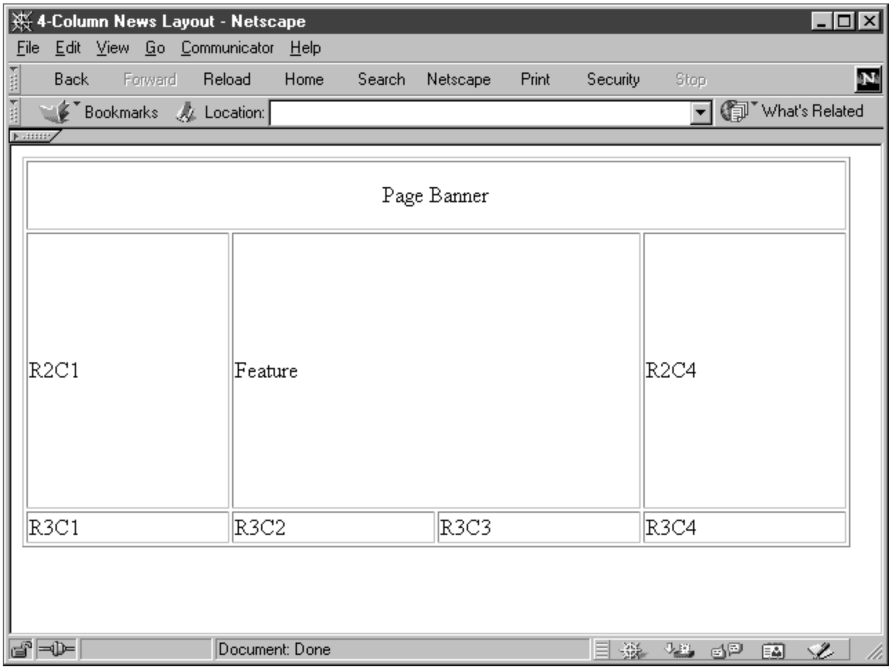
The first table row now contains only one cell with COLSPAN=4. The ALIGN attribute horizontally centers the text. The HEIGHT attribute sets the height of the cell to 50 pixels.

CREATING THE FEATURE CELL

The Feature cell in the layout is R2C2 and spans two columns. This column span requires the removal of one cell in row two to make room for the span. Figure 5-19 shows the result of the column span.

FIGURE 5-19

Feature cell


4-Column News Layout - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Stop
Bookmarks Location: What's Related

Page Banner			
R2C1	Feature		R2C4
R3C1	R3C2	R3C3	R3C4

Document: Done

The following highlighted code shows the COLSPAN attribute in the Feature cell:

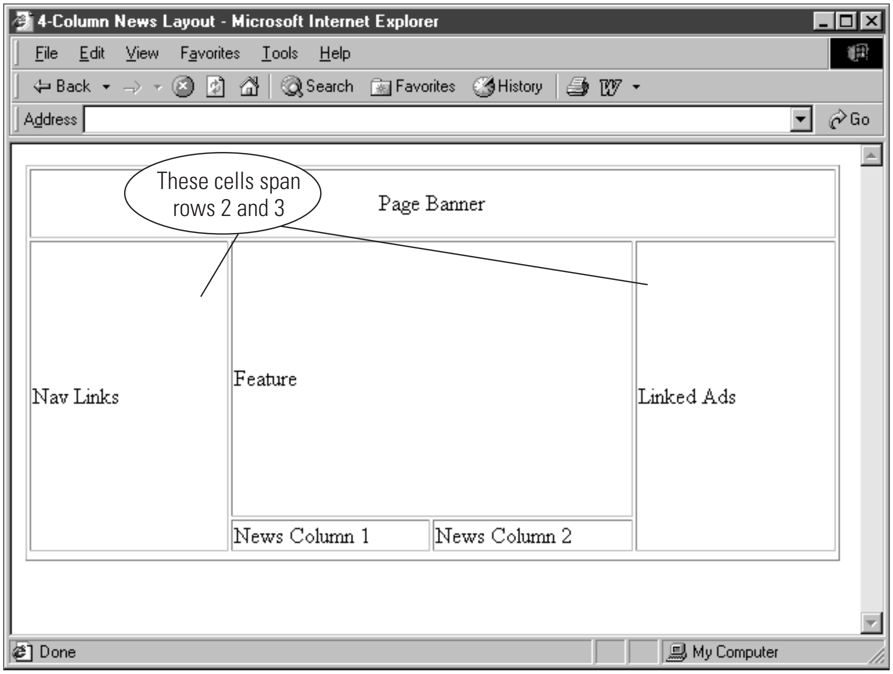
```
<TABLE BORDER WIDTH=590>
<!-- Row 1 Contains Page Banner -->
<TR><TD COLSPAN=4 ALIGN=CENTER HEIGHT=50>Page Banner</TD>
</TR>
<!-- Row 2 Contains Feature Article -->
<TR><TD>R2C1</TD><TD COLSPAN=2
HEIGHT=200>Feature</TD><TD>R2C4</TD></TR>
<TR><TD >R3C1</TD><TD>R3C2</TD><TD>R3C3</TD><TD>R3C4</TD>
</TR>
</TABLE>
```

The code shows the removal of cell R2C3 to accommodate the column span. The HEIGHT attribute sets the vertical height for the Feature cell to 200 pixels.

CREATING THE LINK COLUMNS

The Nav Links and Linked Ads columns in the layout reside in cells R2C1 and R2C4, respectively. These cells span rows two and three of the table. The row spans require the removal of cells R3C1 and R3C4, illustrated in Figure 5-20.

FIGURE 5-20
Link columns


4-Column News Layout - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites History
Address
Go
These cells span rows 2 and 3
Page Banner
Nav Links
Feature
Linked Ads
News Column 1
News Column 2
Done
My Computer

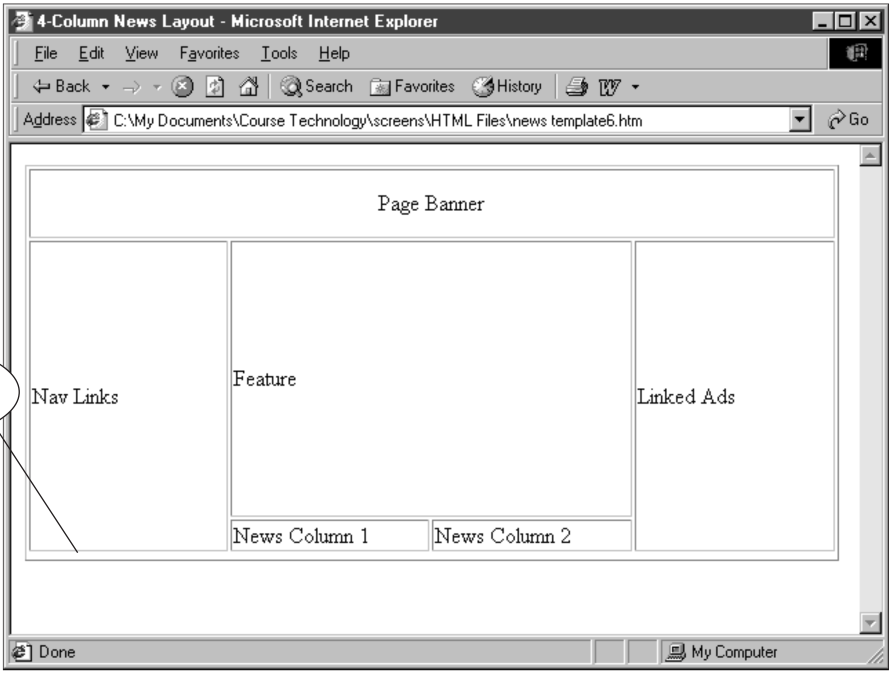
Notice that the column widths have shifted because of the removal of cells. You will learn how to fix the column widths in the next section.

The following highlighted code shows the row spans:

```
<TABLE BORDER WIDTH=590>
<!-- Row 1 Contains Page Banner -->
<TR><TD COLSPAN=4 ALIGN=CENTER HEIGHT=50>Page Banner</TD><
/TR>
<!-- Row 2 Contains Nav Links, Feature Article,
Linked Ads -->
<TR><TD ROWSPAN=2>Nav Links</TD><TD COLSPAN=2
HEIGHT=200>Feature</TD><TD ROWSPAN=2>Linked Ads</TD></TR>
<TR><TD>R3C2</TD><TD>R3C3</TD></TR>
</TABLE>
```

SETTING THE COLUMN WIDTHS

You can set column widths by using the WIDTH attribute at the cell level. Column widths must be set in only one cell per column. Also, set the column widths in only one row of the table. In the example template, no rows contain a cell in each column of the table. The best way to set the widths for the columns is to add a fourth row to the table. This row acts as a width control row. These cells contain the WIDTH attributes and no content. Figure 5-21 shows the template with the addition of a fourth row to control the column widths.


4-Column News Layout - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites History
Address C:\My Documents\Course Technology\screens\HTML Files\news template6.htm
Go
Page Banner
Nav Links
Feature
Linked Ads
News Column 1
News Column 2
Done
My Computer

Control row appears as additional white space in table

FIGURE 5-21
Column width control row

Notice that the new row, which contains no content, appears as a few pixels of additional space at the bottom of the table. With the table borders turned off, the control row appears as white space at the bottom of the page. The following highlighted code shows the addition of the control row.

```
<TABLE BORDER WIDTH=590>
<!-- Row 1 Contains Page Banner -->
<TR><TD COLSPAN=4 ALIGN=CENTER HEIGHT=50>Page Banner</TD>
</TR>
<!-- Row 2 Contains Nav Links, Feature Article,
Linked Ads -->
<TR><TD ROWSPAN=2>Nav Links</TD><TD COLSPAN=2 HEIGHT=200>
Feature</TD><TD ROWSPAN=2>Linked Ads</TD></TR>
<!-- Row 3 Contains News 1, News 2 -->
<TR><TD WIDTH=25%>News Column 1</TD><TD WIDTH=25%>News
Column 2</TD></TR>
<!-- Row 4 Contains Width Controls -->
<TR><TD WIDTH=25%></TD><TD WIDTH=25%></TD><TD WIDTH=25%>
</TD><TD WIDTH=25%></TD>
</TABLE>
```

You can set widths at the cell level to either a pixel or percentage amount. Test carefully to make sure that the layout is browser-compatible, as column widths can be troublesome.

TIP

You can define column widths precisely if you use a graphic within the cell. Because the browser cannot wrap or truncate a graphic, the cell always will be at least as wide as the graphic. Some designers use transparent pixel GIFs (see Chapter 7) to size their columns.

VERTICALLY ALIGNING CELLS

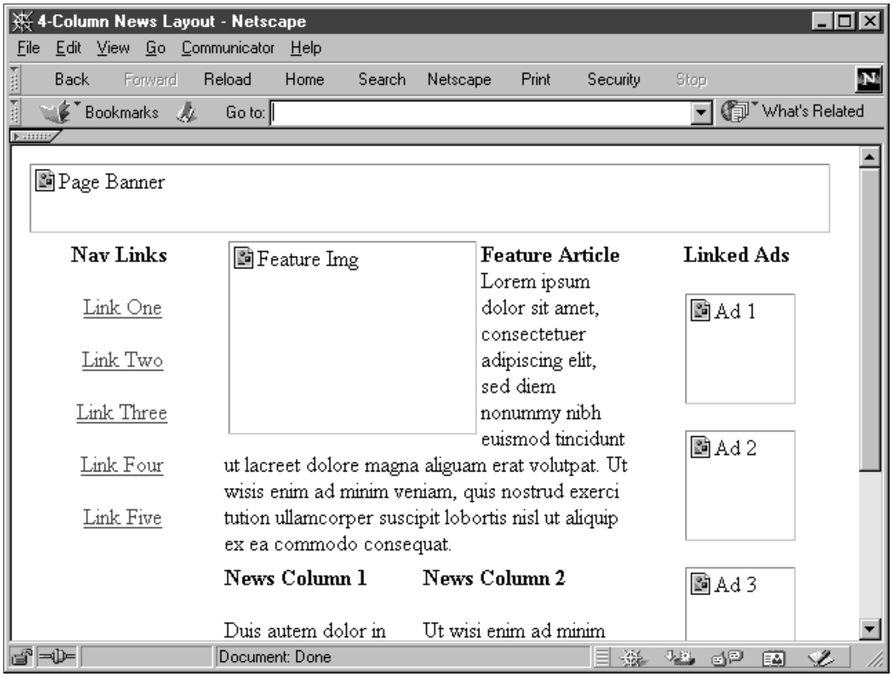
To prepare the table for content, add the VALIGN=TOP attribute to all of the <TR> elements in the template. Adding this attribute forces the content to flow down from the top of the cell, rather than starting at the default vertical alignment setting, which is MIDDLE. The code for a single row element looks like this:

```
<TR VALIGN=TOP>
```

You would add this code to every <TR> element in the table.

TESTING THE TEMPLATE

To verify that your template works properly, populate it with test content. Figure 5-22 shows the template with links, image spaces, and body copy in Netscape Navigator 4.x.


4-Column News Layout - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Stop
Bookmarks Go to: What's Related
Page Banner
Nav Links
Link One
Link Two
Link Three
Link Four
Link Five
Feature Img
Feature Article
Linked Ads
Ad 1
Ad 2
Ad 3
News Column 1
News Column 2
Document: Done

Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diem nonummy nibh euismod tincidunt ut lacreet dolore magna aliguam erat volutpat. Ut wisis enim ad minim veniam, quis nostrud exerci tution ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat.

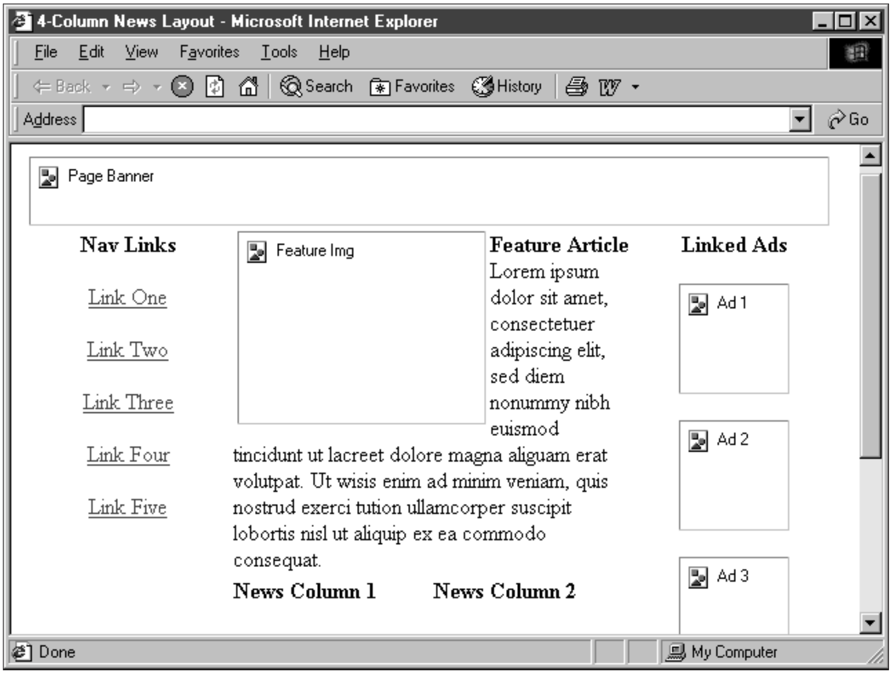
Duis autem dolor in

Ut wisi enim ad minim

FIGURE 5-22
Completed template with test content in Netscape Navigator 4.x

The table borders are turned off. Notice how the content flows down the page as a result of the fixed table width.

Test your template in multiple browsers. Figure 5-23 shows the same template in Internet Explorer 5.0. The template displays properly in both browsers.



Nav Links

Link One

Link Two

Link Three

Link Four

Link Five

Feature Article

Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diem nonummy nibh euismod tincidunt ut lacreet dolore magna aliguam erat volutpat. Ut wisis enim ad minim veniam, quis nostrud exerci tution ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat.

News Column 1 **News Column 2**

Linked Ads

FIGURE 5-23

Completed template with text content in Internet Explorer 5.0

The complete code for the template and test content follows. Notice the following coding points:

- The IMG tag has WIDTH, HEIGHT, and ALT attributes, but no SRC value. This allows you to create empty image placeholders.
- The dummy <A> tags have no HREF value.
- The VALIGN attribute is set to TOP in the <TR> elements.
- The body copy tests the text wrap in the cells.

```
<TABLE  WIDTH=590>
<!-- Row 1 Contains Page Banner -->
<TR>
<TD COLSPAN=4 HEIGHT=50><IMG WIDTH=580 HEIGHT=50 ALT="Page
 Banner"></TD>
</TR>
<!-- Row 2 Contains Nav Links, Feature Article,
Linked Ads -->
<TR VALIGN=TOP>
<TD ROWSPAN=2 ALIGN=CENTER>
<B>Nav&nbsp;Links</B>
<P><A HREF="dummy link">Link One</A></P>
<P><A HREF="dummy link">Link Two</A></P>
<P><A HREF="dummy link">Link Three</A></P>
```

```
<P><A HREF="dummy link">Link Four</A></P>
<P><A HREF="dummy link">Link Five</A></P>
</TD>
<TD COLSPAN=2 HEIGHT=200 VALIGN=TOP>
<IMG WIDTH="180" HEIGHT="140" ALIGN=LEFT ALT="Feature
Img">
<B>Feature Article</B><BR>Lorem ipsum dolor sit amet,
consectetuer adipiscing elit, sed diem nonummy nibh
euismod tincidunt ut lacreet dolore magna aliguam erat
volutpat. Ut wisis enim ad minim veniam, quis nostrud
exerci tution ullamcorper suscipit lobortis nisl ut
aliquip ex eacommodo consequat.
</TD>
<TD ROWSPAN=2 ALIGN=CENTER><B>Linked Ads</B>
<P><IMG  WIDTH=80 HEIGHT=80 ALT="Ad 1"></P>
<P><IMG  WIDTH=80 HEIGHT=80 ALT="Ad 2"></P>
<P><IMG  WIDTH=80 HEIGHT=80 ALT="Ad 3"></P>
</TD>
</TR>
<!-- Row 3 Contains News 1, News 2 -->
<TR VALIGN=TOP>
<TD><P><B>News Column 1</B></P>Duis autem dolor in
hendrerit in vulputate velit esse molestie consequat, vel
illum dolore eu feugiat nulla facilisis at vero eros et
accumsan et iusto odio dignissim qui blandit praesent
luptatum
</TD>
<TD><P><B>News Column 2</B></P>Ut wisi enim ad minim
veniam, quis nostrud exerci taion ullamcorper suscipit
lobortis nisl ut aliquip ex en commodo consequat.
</TD>
</TR>
<!-- Row 4 Contains Width Controls -->
<TR><TD WIDTH=150></TD><TD WIDTH=150></TD><TD WIDTH=150></
TD><TD WIDTH=150></TD></TR>
</TABLE>
```

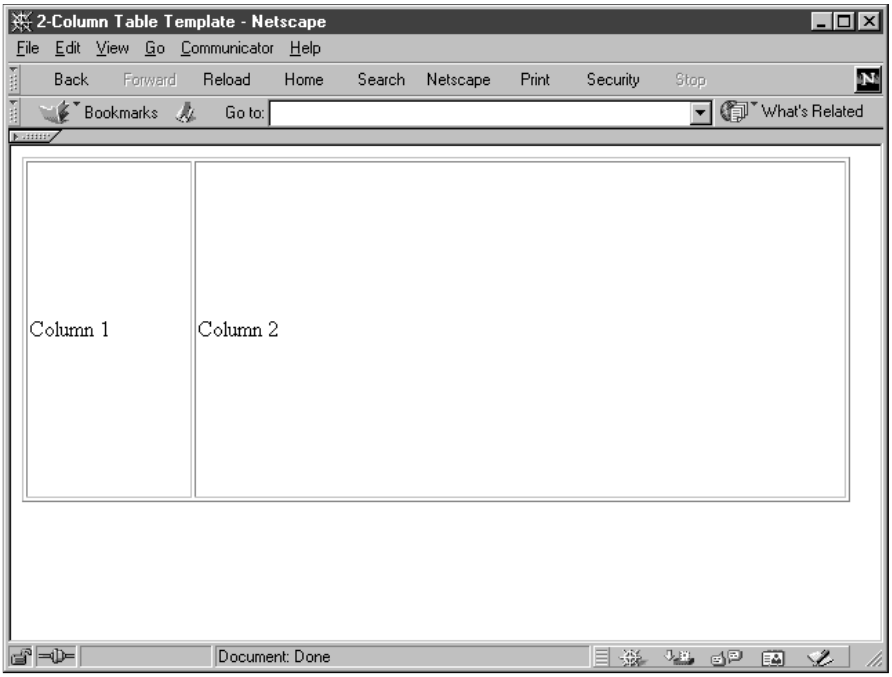
TEMPLATE EXAMPLES

The following templates cover a variety of page layout needs. You may choose to stack different templates on top of each other for more complex layouts. Remember that in these examples, the HEIGHT attribute gives the blank tables some vertical height. Normally you would remove this attribute and let the content determine the height of the table.

TWO-COLUMN TEMPLATE

Figure 5-24 shows a typical two-column template. The left cell is for navigation, the right cell for content. This template is well-suited for lengthier text content. You can adjust the width of the right cell to constrain the text width.

FIGURE 5-24
Two-column template


2-Column Table Template - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Stop
Bookmarks Go to: What's Related
Document: Done

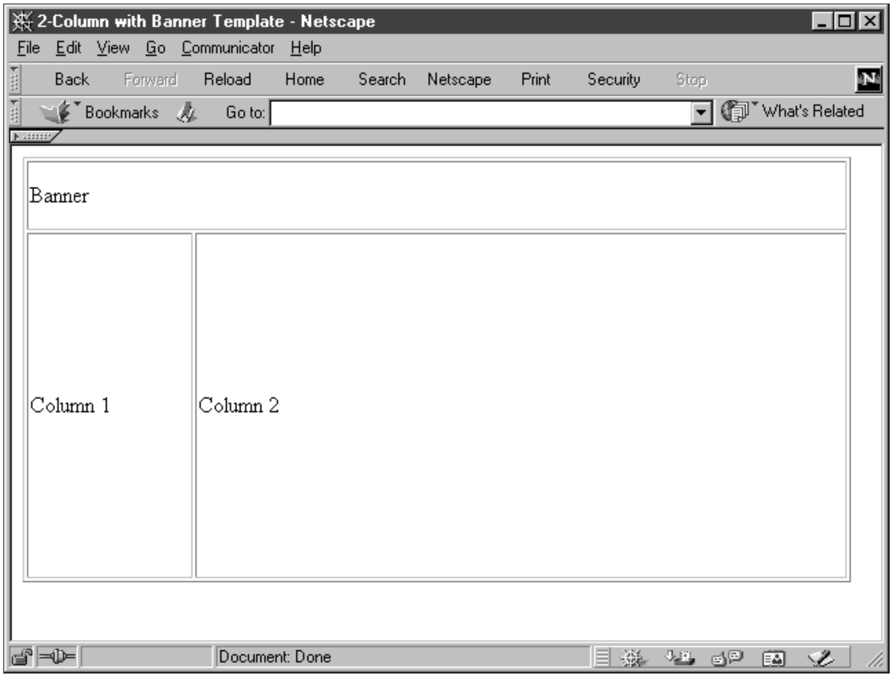
Column 1 Column 2

```
<TABLE WIDTH=590 HEIGHT=250 BORDER>
<TR>
<TD WIDTH=100>Column 1</TD>
<TD>Column 2</TD>
</TR>
</TABLE>
```

TWO-COLUMN WITH BANNER TEMPLATE

Figure 5-25 shows a basic two-column template with an additional column span in the first row. You can use the banner row for logos, navigation graphics, or banner ads.

FIGURE 5-25
Two-column with banner template


2-Column with Banner Template - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Stop
Bookmarks Go to: What's Related
Banner
Column 1
Column 2
Document: Done

```
<TABLE WIDTH=590 BORDER>
<TR><TD COLSPAN=2 HEIGHT=50>Banner</TD></TR>
<TR><TD HEIGHT=250 WIDTH=20%>Column 1</TD><TD>Column 2</TD
></TR>
</TABLE>
```

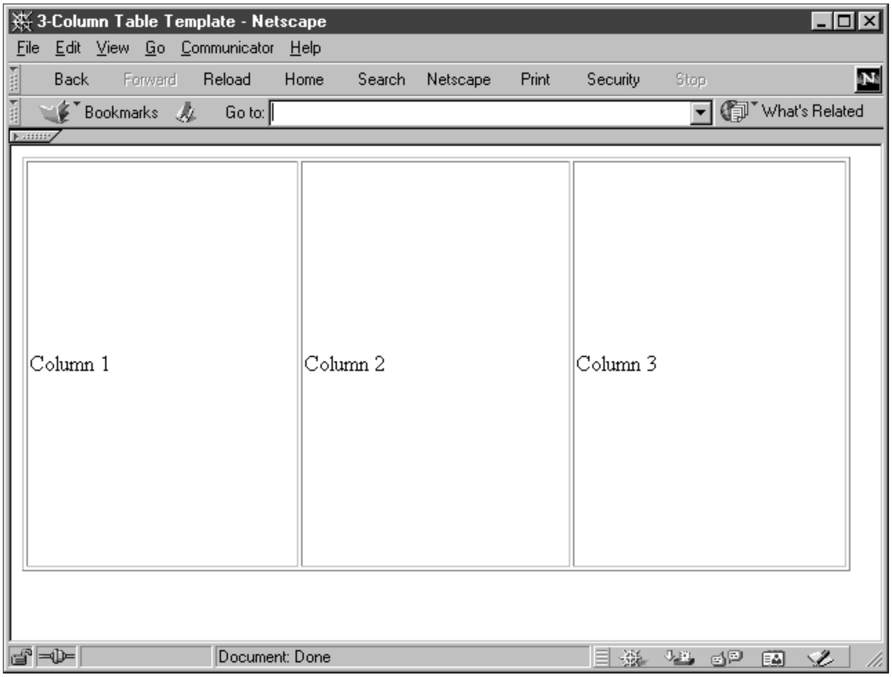
THREE-COLUMN TEMPLATE

Figure 5-26 shows a three-column template. Use a three-column template to contain plain text or a variety of mixed content.

```
<TABLE WIDTH=590 HEIGHT=300 BORDER>
<TR>
<TD  WIDTH=33%>Column 1</TD>
<TD WIDTH=33%>Column 2</TD>
<TD WIDTH=33%>Column 3</TD>
</TR>
</TABLE>
```

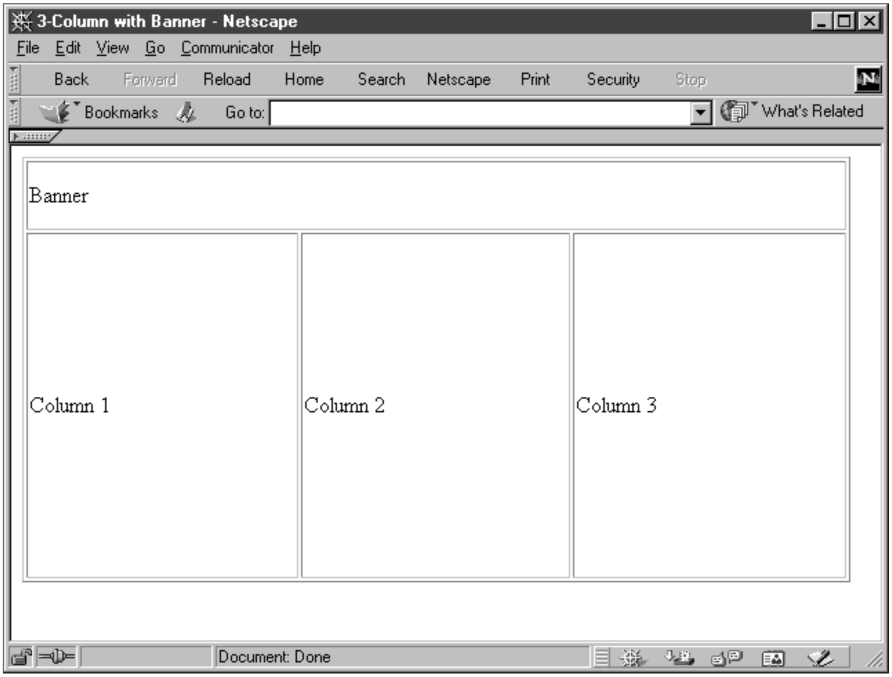
THREE-COLUMN WITH BANNER TEMPLATE

Figure 5-27 shows the addition of a banner to the three-column layout. This layout works well as a top-level page of a section or an entire Web site. The columnar structure lends itself to scanning rather than reading.


3-Column Table Template - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Stop
Bookmarks Go to: What's Related
Document: Done

Column 1	Column 2	Column 3

FIGURE 5-26
Three-column template


3-Column with Banner - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Stop
Bookmarks Go to: What's Related
Document: Done

Banner		
Column 1	Column 2	Column 3

FIGURE 5-27
Three-column with banner template

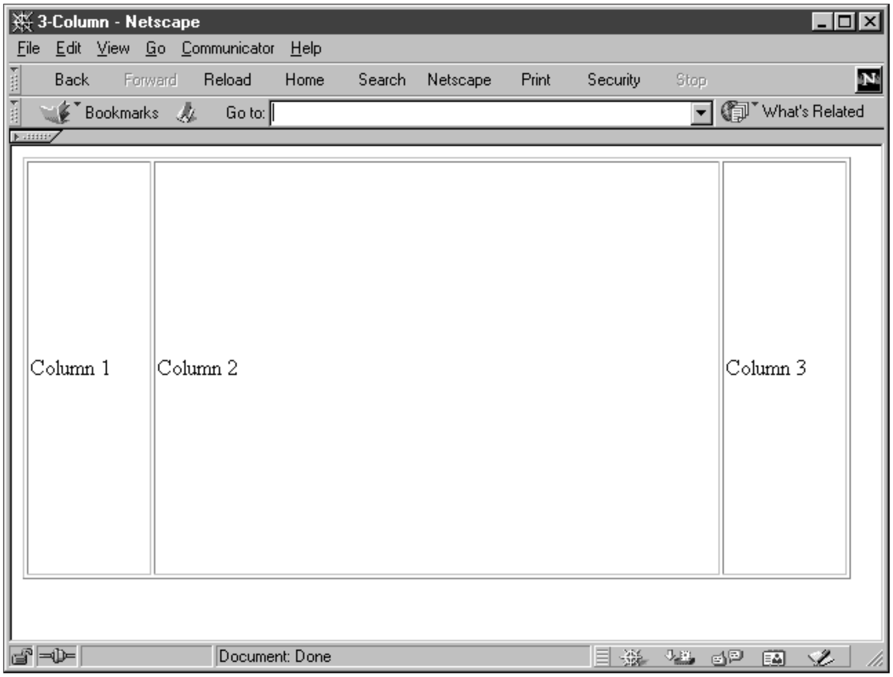
```
<TABLE WIDTH=590 BORDER>
<TR>
<TD HEIGHT=50 COLSPAN=3>Banner</TD>
</TR>
<TR>
<TD HEIGHT=250 WIDTH=33%>Column 1</TD>
<TD WIDTH=33%>Column 2</TD>
<TD WIDTH=33%>Column 3</TD>
</TR>
</TABLE>
```

THREE-COLUMN MAIN TEMPLATE

Figure 5-28 shows the three-column main template with a dominant center column that attracts the user's eye. This template is effective as a top-level or section-level page of a Web site.

FIGURE 5-28

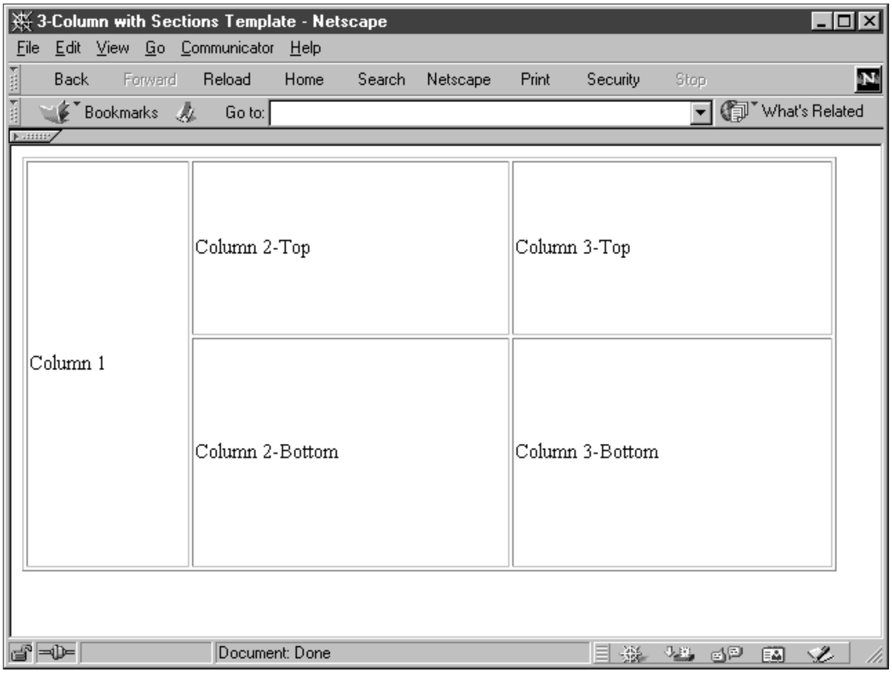
Three-column main template


3-Column - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Stop
Bookmarks Go to: What's Related
Column 1
Column 2
Column 3
Document: Done

```
<TABLE WIDTH=590 BORDER>
<TR>
<TD HEIGHT=300 WIDTH=15%>Column 1</TD>
<TD WIDTH=70%>Column 2</TD>
<TD WIDTH=15%>Column 3</TD>
</TR>
</TABLE>
```

THREE-COLUMN SECTIONED TEMPLATE

Figure 5-29 shows the center column divided into four content areas. Use this template when you want to provide the user a choice between a variety of topics or sections. You can place navigation information in the left column. You most likely would use this template as a top-level page.



Column 1

Column 2-Top

Column 3-Top

Column 2-Bottom

Column 3-Bottom

FIGURE 5-29
Three-column sectioned template

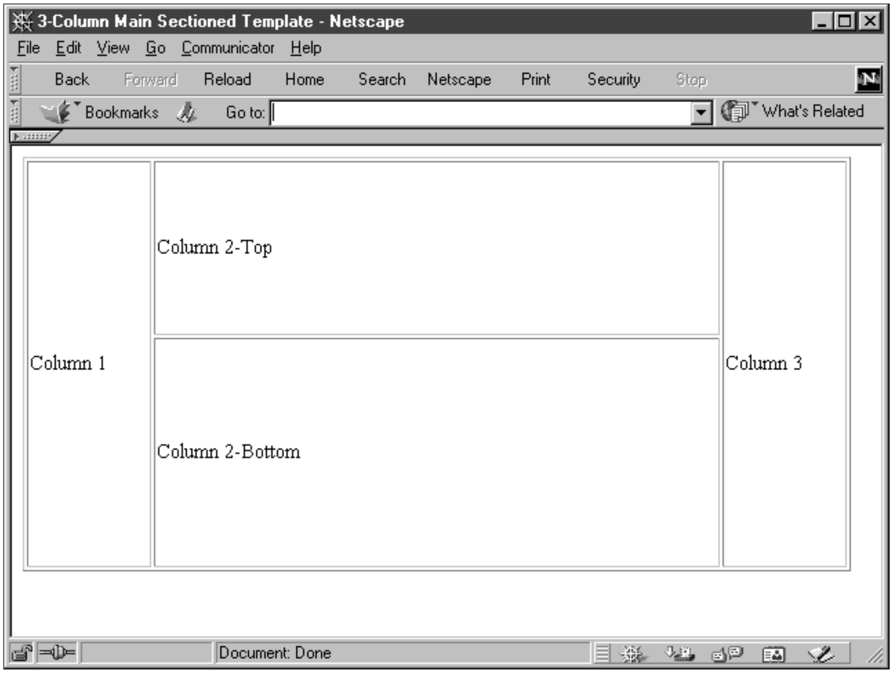
```
<TABLE WIDTH=590 HEIGHT=300 BORDER>
<TR>
<TD ROWSPAN=2 WIDTH=20%>Column 1</TD>
<TD >Column 2-Top</TD>
<TD>Column 3-Top</TD>
</TR>
<TR>
<TD>Column 2-Bottom</TD>
<TD>Column 3-Bottom</TD>
</TR>
</TABLE>
```

THREE-COLUMN MAIN SECTIONED TEMPLATE

Figure 5-30 shows the center column divided into two content areas. Another variety of a top-level page, this one lets you break up the primary area of the screen into two sections. Left and right columns can be used for navigation or associated links.

FIGURE 5-30

Three-column main sectioned template


3-Column Main Sectioned Template - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Stop
Bookmarks Go to: What's Related
Column 2-Top
Column 1
Column 3
Column 2-Bottom
Document: Done

```
<TABLE WIDTH=590 HEIGHT=300 BORDER>
<TR>
<TD HEIGHT=300 WIDTH=15% ROWSPAN=2>Column 1</TD>
<TD WIDTH=70%>Column 2-Top</TD>
<TD WIDTH=15% ROWSPAN=2>Column 3</TD>
</TR>
<TR>
<TD>Column 2-Bottom</TD>
</TR>
</TABLE>
```

SUMMARY & REVIEW

Tables are one of the Web designer's best design tools. Once you master tables, you can build page templates and position content anywhere on a Web page. Tables can be tricky, so remember the following points:

- To build effective page templates, you must be familiar with the HTML table elements and attributes, including the <TABLE>, <CAPTION>, and <TH> elements and global, row-level, and cell-level attributes.
- Plan your tables by sketching them out on paper first. Then create a page template that includes a design for tables.

- When designing HTML tables, write easy-to-read table code, remove extra spaces, and choose whether to center, stack, or nest tables.
- Use fixed table widths if you want to determine the size of your page rather than letting the browser determine the width.
- Use relative widths if you want to build tables that resize with the browser window, wrapping your content to fit.
- Work on your pages with the table borders turned on, which displays the cell boundaries. When you are finished with your layout, turn the borders off.
- Size your tables based on the page size you want to create. Use 640 x 480 as your base screen resolution. In most cases you set the width but not the height of your tables, allowing the content to flow down the page.
- Test your work. Table settings, especially cell widths and heights, can vary based on the user's browser.

REVIEW QUESTIONS

1. Name three print-based design structures that Web designers can duplicate with tables.
2. What are the three basic table elements?
3. What table element presents its content as bold and centered?
4. What attribute can you use with the <CAPTION> element?
5. What are the three levels of table structure?
6. What attribute would you use to adjust spacing between table cells?
7. What attribute would you use to adjust spacing within table cells?
8. In the following code, which attribute takes precedence?

```
<TR VALIGN=TOP><TD VALIGN=MIDDLE>Cell 1</TD><TD>Cell 2</TD
></TR>
```

9. Which attribute lets you color the background of a cell?
10. What value should COLSPAN equal in the following code?

```
<TR><TD>R1C1</TD><TD> R1C2</TD><TD> R1C3</TD></TR>
<TR><TD>R2C1<TD COLSPAN= >R2C2</TD></TR>
```

11. Write the code for a table that fills 75 percent of the browser window.
12. What is the major disadvantage of relative width tables?
13. Write the code to remove the default spacing from a table.
14. Why would you want to remove the default spacing from a table?
15. How do extra character spaces affect a table?
16. What is the best way to center a table?
17. What are the benefits of stacking tables?
18. What are two rules for setting column widths in a table?
19. What attribute lets you align content to the top of a cell?
20. What is the difference between removing the BORDER attribute and setting BORDER=0?

PROJECTS

1. Browse the WWW and find Web sites that use page templates.
   a. Create a sketch of a page from the Web site that depicts your idea of the page template.
   b. Examine the code to see how the template actually was built.
   c. Compare and contrast your method with the designer's method of building the template.
2. Practice building test pages.
   a. Using one of the template examples from this chapter, build a mock-up of a finished page using test content.
   b. Test the page in multiple browsers and note any differences in the way the content is displayed.
3. Surf the WWW and find examples of Web sites that use fixed tables. Describe why you think the designers chose a fixed layout for the content.
4. Surf the WWW and find examples of Web sites that use relative tables. Describe why you think the designers chose a relative layout for the content.
5. Choose an example template from the Principles of Web Design Companion Web site and fill it with test content.
   a. Set the width to 100 percent.
   b. Test the results in multiple browsers and at multiple resolutions.
   c. Note any display problems and suggest how you might solve the problems.
6. Create a seamless navigation bar using a table to hold the graphics together. Use the navigation graphics from the Principles of Web Design Companion Web site, or choose your own graphics.
7. Describe two ways that multiple tables can affect the way your pages download.
8. Build a template that meets the following criteria:
   - Fills the screen at 640 x 480 resolution without showing a horizontal scroll bar
   - Builds a three-column layout
   - Contains a banner cell that spans the layout
   - Fixes content independent of browser size

CASE STUDY

Design the page templates for the different information levels of your Web site. Create sketches for each template, and describe why the templates fit your content.

You will find all of the page templates shown in this chapter on the Companion Web Site. Use these templates as a starting point for your Web pages. Adapt the page templates to your own needs, or build your page templates from scratch. Test the page templates with content in different browsers to make sure that they display properly.

Once your templates test properly, start to build the files for your Web site by copying the templates to individual files and naming them to match your flowchart from Chapter 3.